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Kevin S. Lemack Nields & Lemack Suite 7 176 E. Main Street Westboro, MA 01581			EXAMINER KURTZ, BENJAMIN M	
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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/666,017
Filing Date: September 18, 2003
Appellant(s): GAIGNET ET AL.

Kevin Lemack
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 7/9/10 appealing from the Office action mailed 1/12/10.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

1, 2, 4-12 and 14-23.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

4,990,248	Brown et al.	2-1991
3,542,199	Bray	11-1970
5,221,473	Burrows	6-1993
4,645,601	Regunathan et al.	2-1987
4,948,505	Petrucchi et al.	8-1990
5,891,334	Gundrum et al.	4-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 2, 4-6, 14-16, 18-21 and 23 are rejected under 35 U.S.C. 103(a) as obvious over Bray US 3 542 199, Brown US 4 990 248 and Burrows US 5 221 473.

Claims 1 and 14-16, Bray teaches a module comprising: a cylindrical container provided at a first of its axial ends with a head (20) having fluid inlet and outlet orifices communicating with the interior of the module and having a cylindrical skirt (part containing 38) projecting axially therefrom, in which are housed pretreatment means (32) and treatment means (60), which perform the same function in substantially the same way with substantially the same result as the pretreatment and treatment means disclosed herein, wherein the container is monolithic to form a disposable module and the interior is divided by separator means (36), which perform the same function in substantially the same way with substantially the same results as the separator means disclosed herein, into an external cylindrical space and an internal cylindrical space, the separator means extending from the cylindrical skirt to the bottom of the container, the external and internal cylindrical space communicating with each other via one or more passages at the bottom of the container, the treatment means include a cartridge including one or more selectively permeable membranes, the pretreatment means is housed in the external cylindrical space and the treatment means is housed in the internal cylindrical space, the external cylindrical space communicates, at the first axial end of the container with a first orifice (30) and the internal cylindrical space communicates separately, at the first axial end, with an orifice (88), the cartridge comprises a cylindrical enclosure and concentric therewith a hollow perforated central

innermost tube (58) of the cylindrical container in which the cartridge is contained, the central inner most tube sharing the axis of the cylindrical container with the external cylindrical space and the internal cylindrical space, a reverse osmosis treatment membrane between the cylindrical enclosure and the central inner most tube and communicating with the central innermost tube (fig. 1). Bray does not teach the first axial end having an inlet and two outlets or the bottom comprising a crenellate ring.

Brown teaches a module comprising: a cylindrical container (44, 50) comprising a cylindrical wall closed at a first axial end by a head (45, 51) and closed at a second axial end by a bottom (46, 55), the container provided at the first axial end with fluid inlet and outlet orifices communicating with the interior of the module, in which are housed pretreatment means (16, 60) and treatment means (29, 70), which perform the same function in substantially the same way with substantially the same result as the pretreatment and treatment means disclosed herein, the container is monolithic and the interior thereof is divided by a separator (15, 71) into an external and internal cylindrical space communicating with each other via one or more passages in the vicinity of the second axial end of the container, the separator comprising a cylindrical wall extending from the head toward the bottom, the treatment means includes a cartridge including one or more selectively permeable membranes, the pretreatment means and the cartridge are housed in the external cylindrical space and the internal cylindrical space respectively, the external cylindrical space communicates at the same end as the first axial end of the container, with a first orifice (48, 54), and the internal cylindrical space communicates separately at the same end as the first axial end of the container with a

second orifice (43, 56) and a third orifice (91, 58), the cartridge comprises a cylindrical enclosure and concentric therewith a hollow perforated central tube (12, 62), the central tube sharing the axis of the cylindrical container with the external cylindrical space and the internal cylindrical space, one or more reverse osmosis treatment membranes between the cylindrical enclosure and the central tube and communicating with the central tube (fig. 1, 2, 5). If the tube (12, 62) is not considered to be the innermost tube of the container, it would have been obvious to one of ordinary skill in the art at the time the invention was made to remove the post-filter (30, 75) should it be desirable to replace less than the entire filter cartridge (col. 10, lines 38-42) and omission of an additional filtering step would be obvious if this feature were not desired, *In re Larson*, 144 USPQ 347 (1965). Upon removal of the post-filter the tube (12, 62) being the innermost tube of the cartridge would also be the innermost tube of the cylindrical container. Brown does not teach the separator wall extending from the head to the bottom or a crenellated ring.

The use of a separator wall extending from the head to the bottom is known in the art as taught by Bray and the use of a head assembly having an inlet and two outlets is also known in the art as taught by Brown. All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention, *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (2007).

Bray teaches a loose connection between the wall (36) and the bottom provides a flow path for fluid to flow from exterior cylindrical space to the interior cylindrical space. Burrows teaches a crenellated ring of the bottom of a reverse osmosis cartridge, the ring includes locating means (160) taking the form of patterns (160) projecting from the internal face of the bottom of the container, the ring holds a cylindrical wall (142) of a separator means at an axial distance from the face of the bottom, and the ring includes recesses between the crenellations forming axial abutments for the wall (142) (fig. 4 and 5, col. 8, lines 20-28) with passages for fluid formed by the crenellations in the crenellated ring. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the ring as taught by Burrows in the module because the ring allows water to pass through it to a central tube (fig. 5, col. 8, lines 24-25). The ring of Burrows would allow a less restricted flow of fluid from the outer cylindrical space to the internal cylindrical space.

Claim 2 and 5, Bray and Brown further teach the cartridge is a reverse osmosis cartridge (abstract of both Bray and Brown); and the pretreatment means is frontal filtration or polyphosphates (Brown: col. 8, line 53 – col. 9, line 52, Bray: col. 2, lines 10-15).

Claim 4, Bray further teaches means (90) for providing a sealed connection between the separator and the cylindrical enclosure of the cartridge, the seal being attached to the cylindrical enclosure and the extending around the cylindrical enclosure (fig. 1).

Claim 6, Brown further teaches the container includes a cylindrical wall closed at the first axial end by the head module including three parallel connectors (48, 43, 91) in each of which is formed one of the three orifices (fig. 1, 2). The recitation of the head and bottom being non-removable is merely a recitation of making the head and bottom integral with the housing. [T]he use of a one piece construction instead of the structure disclosed in [the prior art] would be merely a matter of obvious engineering choice; *In re Larson* 144 USPQ 23 1952.

Claim 23, Brown further teaches the central tube is closed at the same end as the annular face of the cartridge through which the fluid enters the cartridge (fig. 1, 2).

Claims 18-21, Brown further teaches in the second embodiment the head and the bottom each include a nesting retainer (head retainer at 53d, bottom retainer at 79d) housing an axial end of a central tube (62), a seal (59d) is between the bush and the tube (63) housed in a groove formed in the central tube (63), and the bush communicates with the second orifice (58) (fig. 5); and a central truncated cone (joined to the tube (62) at 79') inside the central tube (62) and it projects over a longer distance from the inner face of the bottom than the retainer of the bottom (fig. 5).

Claims 7, 8, 10-12 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bray '199, Brown '248 and Burrows '473 as applied to claim 1 above, and further in view of Regunathan et al. US 4 645 601.

Claim 7, Bray, Brown and Burrows teach the module of claim 6 but do not teach the connectors (54, 56, 58) extend perpendicular to the axis of the container.

Regunathan teaches a head (30) with three parallel ports (50, 52, 54) with connectors that can take various forms to accommodate the construction of the particular head member with which it is to be associated (col. 3, lines 8-11). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the connectors to be perpendicular to the axis of the container to fit a head member adapted to connect to a module with perpendicular ports.

Claim 8, Bray teaches the skirt provides continuity of separation from a corresponding longitudinal end of the cylindrical wall to the bottom and Burrows teaches the ring provides continuity of separation from a corresponding longitudinal end of the cylindrical wall to the head.

Claims 10-11, Brown further teaches the cylindrical skirt (53) has the wall (71) housed concentrically within it with a seal (59d) in an annular recess between them (fig. 5).

Claim 12, Brown further teaches housing the wall (71) within the skirt (53) therefore it would have been obvious to one having ordinary skill in the art to house the wall (71) within the ring (28) as taught by Whittier (876) because the skirt provides a bearing surface for the wall (71) for sealing (col. 7, lines 17-19).

Claim 22, Brown further teaches a porous disk (35) in the vicinity of the axial ends of the container but not retaining the pretreatment means. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use

the disk for the pretreatment means. The porous disks function to keep the carbon granules within the filter (col. 4, lines 61-63).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bray '199, Brown '248, Burrows '473 and Regunathan '601 as applied to claim 8 above, and further in view of Petrucci et al. US 4 948 505.

Bray, Brown, Regunathan and Whittier teaches the filter module but do not teach the head being glued or welded together. Petrucci teaches the top cover (134) bonded to the main housing (54) by welding (col. 9, lines 48-50). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the welding as taught by Petrucci because the canister is easily and economically fabricatable (col. 9, lines 3-5).

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bray '199, Brown '248, Burrows '473 and Regunathan '601 as applied to claim 8 above, and further in view of Gundrum et al. US 5 891 334.

Bray, Brown, Regunathan and Whittier teaches the filter module of claim 8 but does not teach centering fingers. Gundrum teaches a cylindrical separator wall (33) with radially extending fingers (34) extending to the container wall (25) in the vicinity of each axial end of the wall (33) (fig. 2 and 5). It would have been obvious to one having

ordinary skill in the art at the time the invention was made to use the fingers as taught by Gundrum because the fingers (34) define a flow passageway between the separation wall (33) and the container wall (25) (col. 4, lines 51-67).

(10) Response to Argument

Appellant argues that it would not have been obvious to modify Bray to provide an axial end with an inlet and two outlets. Claim 1 is rejected over Bray, Brown and Burrows. Appellant has argued the modification of Bray with the teachings of Brown but has not addressed the modification of Brown with the teachings of Bray. While it is not obvious to provide an inlet and two outlets at one end of Bray, appellant has not addressed the obviousness rejection of modifying Brown with Bray. The rejection was formulated and written to clearly show that all of the claimed elements are already known in the art and appellant's claimed invention is merely the combination of these well known structures in the prior art by known methods, with no change in their respective functions yielding predictable results. The rejection states,

"The use of a separator wall extending from the head to the bottom is known in the art as taught by Bray and the use of a head assembly having an inlet and two outlets is also known in the art as taught by Brown. All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have

yielded predictable results to one of ordinary skill in the art at the time of the invention, KSR International Co. v. Teleflex Inc., 82 USPQ2d 1385 (2007)."

Brown teaches a separator wall which does not extend from the head to the bottom. Bray teaches a separator wall (36) between a pretreatment means (32) and a reverse osmosis membrane (60) that extends from a head to a bottom of the housing. The claim merely recites elements known in the prior art that are combined by known methods with no change in their function and achieving predictable results. Appellant has not provided any evidence that the claimed combination of elements provide anything but predictable results. Extending the separator wall from the head to the bottom of the assembly of Brown, providing a space for fluid to flow at the bottom as taught by Bray, would not affect the operation of Brown and is simply the application of the known wall of Bray to perform the same function in a predictable manner.

Appellant argues that the examiner has mischaracterized the teachings of Burrows because the separator means of Burrows does not extend to the crenellated ring. Bray already teaches the separator means, or wall (36) extending from a head assembly to a bottom of the module. Burrows teaches a crenellated ring that holds a wall element (159), which is a separator means which is an extension of (142). The rejection is based on the modification of the connection between the wall (36) and bottom (44) as taught by Bray, thereby providing the crenellations of Burrows. The wall of Bray extends to a bottom but requires fluid be able to flow to the inside of the wall and Bray provides a loose fitting to allow fluid to flow. Burrows also teaches a wall that

extends to a bottom that requires fluid be able to flow the inside of the wall. Burrows provides a crenellated ring in the bottom to allow fluid to flow to the inside of the wall. Once again, the invention as claimed is merely a combination of elements known in the prior art applied by known methods with no change in their functions with predictable results. Furthermore, the crenellated structure of the ring as taught by Burrows (see figure of crenellations below) provides gaps in the ring that would provide less restriction to fluid flow by providing larger spaces for the fluid to flow through rather than the small gap between two solid walls as shown in figure 1 of Bray.



Appellant argues that the ring of Burrows is at the bottom of the module but the connection between the wall and bottom of Bray is not in fact the bottom of the module. The bottom of the module of either Brown, Bray or Burrows is merely a matter of relative orientation. Calling one end of the module a bottom and the other end a top is arbitrary and does not structurally or operationally limit any of the modules of the prior art.

Appellant argues that Burrows does not teach the separator means dividing the interior of the module into an external cylindrical space and an internal cylindrical space with a pretreatment means housed in the external space and the cartridge housed in the internal space. Both Brown and Bray teach this feature and Burrows is not relied upon to teach such a feature.

Appellant argues that neither Brown nor Bray are designed or arranged to form a monolithic disposable module. The filters of Bray and Brown are monolithic in that they constitute or act as a single uniform whole, as defined by dictionary.com. Also, the filters of Bray and Brown may be disposed of as a whole and it is unclear what structure applicant is reciting that makes the container non-disposable and what makes the container disposable. Anything can be disposed of at the choice of the user and ultimately will be disposed of when its useful life is over. Regarding claim 6, making the head and bottom non-removable does not patentably distinguish over the prior art. Making a head and bottom non-removable is essentially making the unit integral, which is not patentable for the reasons stated in the rejection. Making the head and bottom integral with housing of Brown or Bray or making the head and bottom non-removable would not affect the operation of either module. Integral units are very well known in the art.

Regarding claim 15, appellant has misinterpreted the claim. The claim states, "...said crenellated ring includes recesses between the crenellations and forming axial abutments..." There is no recitation in the claim of the recesses forming axial abutments on the crenellated ring forming axial abutments, which Burrows teaches.

Regarding claims 18-21, the head retainer (53d) of Brown retains the cartridge as claimed, see figure 5 of Brown.

Regarding claim 8, Appellant argues none of the cited prior art references teach a skirt and crenellated ring provide continuity of separation from a corresponding longitudinal end of the cylindrical wall to the head and to the bottom, respectively. This

feature is taught by Bray, where the cylindrical wall (36) extends from a skirt on the head to the bottom and the combination with Burrows teaches the crenellated ring, as detailed in the rejection.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Benjamin Kurtz/

Examiner, Art Unit 1797

/Duane Smith/

Supervisory Patent Examiner, Art Unit 1797

Conferees:

Duane Smith /DS/

Supervisory Patent Examiner, Art Unit 1797